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TITLE : FORMED COMPACT CONTAINING LOW-SILICA X TYPE ZEOLITE, ITS PRODUCTION AND USE THEREOF

ABSTRACT : PROBLEM TO BE SOLVED: To produce a zeolite formed compact having a high adsorption capacity, high characteristics and a great pore volume and satisfying strength physical properties represented by compressive strength and to provide both a method for producing the zeolite formed compact and a method for separating and purifying a gas using the same zeolite formed compact.

SOLUTION: This formed compact with a low-silica X type zeolite has ≥ 90 mol% of content of the low-silica X type zeolite in 1.9-2.1 molar ratio of $\text{SiO}_2/\text{Al}_2\text{O}_3$ and contains the balance which is a binder comprising a clay mineral having a fibrous one-dimensional structure. The method for producing the formed compact comprises kneading and grinding the low-silica X type zeolite in 1.9-2.1 molar ratio of the $\text{SiO}_2/\text{Al}_2\text{O}_3$ with a binder mixture comprising a sepiolite type clay and/or an attapulgite type clay and further a kaolin type clay having a fibrous one-dimensional structure, then forming the resultant mixture, drying and baking the formed compact, subsequently bringing the baked compact into contact with a mixed solution of sodium hydroxide with sodium silicate and converting the kaolin type clay in the mixture into the low-silica X type zeolite.

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